



INVESTIGATOR'S ANNUAL REPORT

United States Department of the Interior
National Park Service

All or some of the information you provide may become available to the public.

OMB # (1024-0236)
Exp. Date (11/30/2010)
Form No. (10-226)

Reporting Year: 2008	Park: Shenandoah NP	Select the type of permit this report addresses: Scientific Study	
Name of principal investigator or responsible official: William H. Martin		Office Phone: 3048763219	
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Additional investigators or key field assistants (first name, last name, office phone, office email) Name: William H. Martin Phone: 3048763219 Email: whmartin@crotalus.org			
Project Title (maximum 300 characters): Timber Rattlesnake Population Monitoring			
Park-assigned Study or Activity #: SHEN-00058	Park-assigned Permit #: SHEN-2002-SCI-0022	Permit Start Date: Jan 01, 2002	Permit Expiration Date: Dec 31, 2008
Scientific Study Starting Date: Jun 01, 1990		Estimated Scientific Study Ending Date: Dec 31, 2023	
For either a Scientific Study or a Science Education Activity, the status is: Continuing		For a Scientific Study that is completed, please check each of the following that applies: <input type="checkbox"/> A final report has been provided to the park or will be provided to the park within the next two years <input type="checkbox"/> Copies of field notes, data files, photos, or other study records, as agreed, have been provided to the park <input type="checkbox"/> All collected and retained specimens have been cataloged into the NPS catalog system and NPS has processed loan agreements as needed	
Activity Type: Research			
Subject/Discipline: Herpetology (Amphibians / Reptiles)			

Purpose of Scientific Study or Science Education Activity during the reporting year (maximum 4000 characters): 1. Locate overwintering dens and birthing rookeries. 2. Determine movements of snakes. 3. Determine timing of seasonal activities. 4. Determine rates of growth, shedding, maturation, reproduction, and survivorship. 5. Investigate annual variations in life history characteristics. 6. Investigate relationship between weather, acorn production, rodents, and rattlesnake reproduction. 7. Investigate relationship between weather and failure to bring the young to term. 8. Determine long-term population trends.
Findings and status of Scientific Study or accomplishments of Science Education Activity during the reporting year (maximum 4000 characters): My visits were somewhat curtailed during 2008, due to a leg injury that kept me out of the field during the normally productive birthing period. The snakes at a low-elevation site were well past peak emergence on 2 May and only 6 snakes were seen. (Highest 1-day counts at this site were 38 and 41 seen in late April of '06 and '04.) A normally productive gestating site was found to have been taken over by a coyote and no rattlesnakes were observed. Most birthing apparently occurred during the 23 August to 6 September period. Lance Benedict (pers comm.) reported a female with

a litter on 24 August at a low-elevation site where I had recorded five gravid female rattlesnakes in June and then he reported a female with a litter at a high-elevation (3100 feet) site on 7 September.

Ingress apparently peaked around 9 October. Four sites were checked on three days from 6-15 October with a total of 19 rattlesnakes observed. We may be building toward a high reproduction in 2009, the last previous years of high reproduction having been noted in the years 2000 and 2003. With the aid of increasingly good satellite imagery I have identified a number of potential sites which I intend to visit in 2009.

Number of days in Shenandoah NP: 6

Number of sites visited: 8

Number of rattlesnakes seen: 30

Number of years research completed: 35

For Scientific Studies (not Science Education Activities), were any specimens collected and removed from the park but not destroyed during analysis?

No

Funding specifically used in this park this reporting year that was provided by NPS (enter dollar amount):
\$0

Funding specifically used in this park this reporting year that was provided by all other sources (enter dollar amount):
\$3480

List any other U.S. Government Agencies supporting this study or activity and the funding each provided this reporting year:

Paperwork Reduction Act Statement: A federal agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. Public reporting for this collection of information is estimated to average 1.625 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the forms. Direct comments regarding this burden estimate or any aspect of this form to Dr. John G. Dennis, Natural Resources (3127 MIB), National Park Service, 1849 C Street, N.W., Washington, DC 20240.